i m m e r s u n

Water heating for your PV system

Installation and user guide

v1.1

Contents

1. Overview

Thank you for choosing immerSUN. This intelligent device is a sensible and practical addition to your PV or Wind micro generation system.
Water is heated via your existing immersion heater, using surplus power that would otherwise have been exported to the grid.

Please read and follow this guide to ensure many years of trouble-free operation and savings!

Key features

- Heats water from your PV system or Wind Turbine
- Effectively adjusts power levels to the immersion heater, keeping the exported power at virtually zero
- The consumer no longer needs to be at home to use the free electricity, whatever the weather
- No need to change the immersion heater
- Suitable for all electrical microgeneration systems
- Built-in hot water boost timer
- Manual hot water boost function
- Back-lit LCD display shows energy saved, output power and operating mode
- Dual immersion heater control option
- Internal multi-function relay in-addition to the modulated power output
- Up to 4 devices can be daisy-chained for master / slave operation
- MODBUS RS485 interface for system expansion and external data logging
- Internal thermal protection
- 3 year product warranty

2. Technical Specifications

Electrical Specifications

Description	Nominal	Minimum	Maximum
Supply Voltage (VAC)	240	220	260
Supply Frequency (Hz)	50Hz	45Hz	55Hz
Load Current (A)	13	-	16
Load Power (kW)	3	-	3.2
Relay Contact Voltage (VAC)	-	-	250
Relay Contact Current (A)	-	-	16
Clamp Current (A)	-	-	100
Recommend Generation Size (kW)	-	2	10

Dimensions and weight

Width (mm)	150	Depth (mm)	64
Height (mm)	140	Weight (g)	935

3. Installation

3.1 Mounting

Often, the most suitable location for the immerSUN is near to the consumer unit. Usually all the connections required are available here.

The following should be considered when deciding upon the most suitable location:

- Close to the main incoming mains electrical supply of the property

- Access to immersion heater supply cable (this is usually at the consumer unit)

- Access to suitable supply via 16A MCB or 13A fused outlet

- User access to immerSUN controls and visibility of LCD screen

- Adequate ventilation – keeps vents clear and provide airflow around the unit

- Cable access point – through the rear or bottom of the unit

Use the 3 screws and wall plugs provided to mount the immerSUN at the chosen location.

Remove LCD protective cover after mounting the unit.

DO NOT BLOCK VENTS! The enclosure may get hot, always keep vents clear of obstruction and allow sufficient clearance from walls, ceilings and other objects. Observe minimum clearances as shown below.
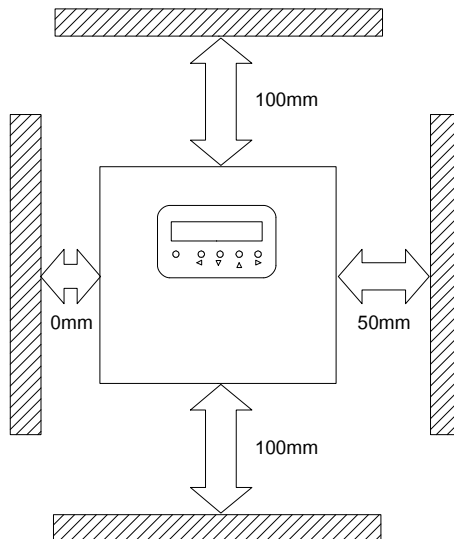
3.2 Electrical Connections

Electrical connections should be made only by a competent person. Do not attempt to wire this unit if you are not a qualified or an experienced electrician. Installation may involve alterations to fixed wiring and opening the consumer unit, there is risk of death by electrocution.

Choose the most suitable cable entry points (rear or bottom) and make the electrical connections to the unit according to the appropriate wiring diagram (see section 3.4). Use the blanking plugs provided for unused cable entry points.

Alternative loads
In some cases it may be desired to control the power to a load other than an immersion heater. The load MUST be a simple resistive load, e.g. an electric towel radiator, storage heater etc.

The load must not exceed 3kW and must not include digital or analogue timers, as they may be damaged by the proportional output control of the immerSUN.

IMPORTANT!
Be sure to fully tighten terminals, checking the cables are securely clamped by the terminals and the cord grips. Failure to ensure good connection could result in fire or permanent damage to the unit.
NOTE: The screw terminals are 'rising clamp' type.

TERMINALS

MAINS

IN	LIVE IN	240V supply input, should be from 16A MCB or 13A fused outlet
OUT	LIVE OUT	Live output to immersion heater, maximum load 13A or 3kW
N	NEUTRAL (x3)	Mains Neutral terminals (All Neutral terminals are internally connected)
E	EARTH (x3)	Mains Earth terminals (All Earth terminals are internally connected)
		IMPORTANT! Earth MUST be connected

RELAY (used for some additional functions, see wiring diagrams in section 3.4)

NO	NORMALLY OPEN	Volt-free normally open relay contact (max. current 13A)
COM	COMMON	Volt-free common relay contact (max. current 13A)
NC	NORMALLY CLOSED	Volt-free normally closed relay contact (max. current 13A)

CLAMP

CT	CURRENT	AC current transformer clamp terminals

COMMUNICATIONS

A	RS485 A	RS485 communication terminal A (D+)
B	RS485 B	RS485 communication terminal B (D-)
GND	DIGITAL GND	Ground connection for future use
5V	5V OUTPUT	5-volt output connection for future use

3.3 Clamp Installation

Correct positioning of the clamp is vital to the operation and efficiency of the immerSUN. Incorrect installation may result in increased electrical costs to the user.

The clamp should be located at the main incoming grid supply to the building. This will be the supply from the main electric meter (NOT the PV generation meter). Close the clamp around one of the cables (Live or Neutral) from the meter, this can be at the meter location or inside the consumer unit.

IMPORTANT! Ensure the clamp is securely closed around the cable.

Connect the clamp wire to the CLAMP terminals inside the immerSUN. Don't worry about polarity.

The clamp wire can be extended if required, however due to the small signal from the clamp, twisted-pair cable should be used to help eliminate possible interference. A maximum length of 50m is recommend.

Where there is more than one consumer unit, the clamp should be installed at the primary incoming supply (i.e. before it splits).
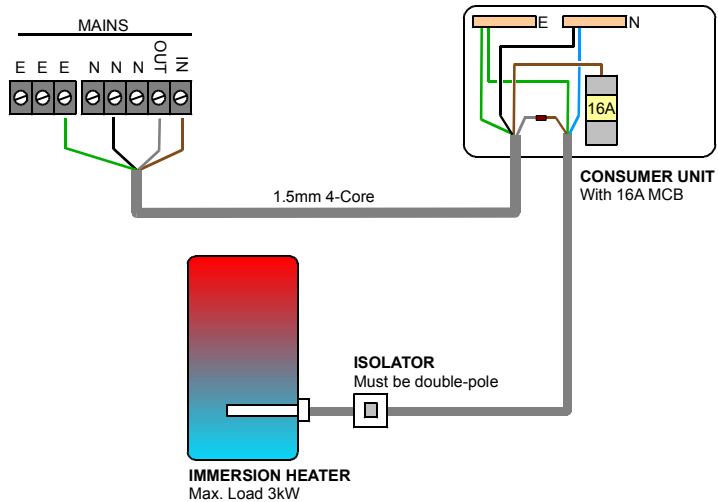
3.4 Wiring Diagrams
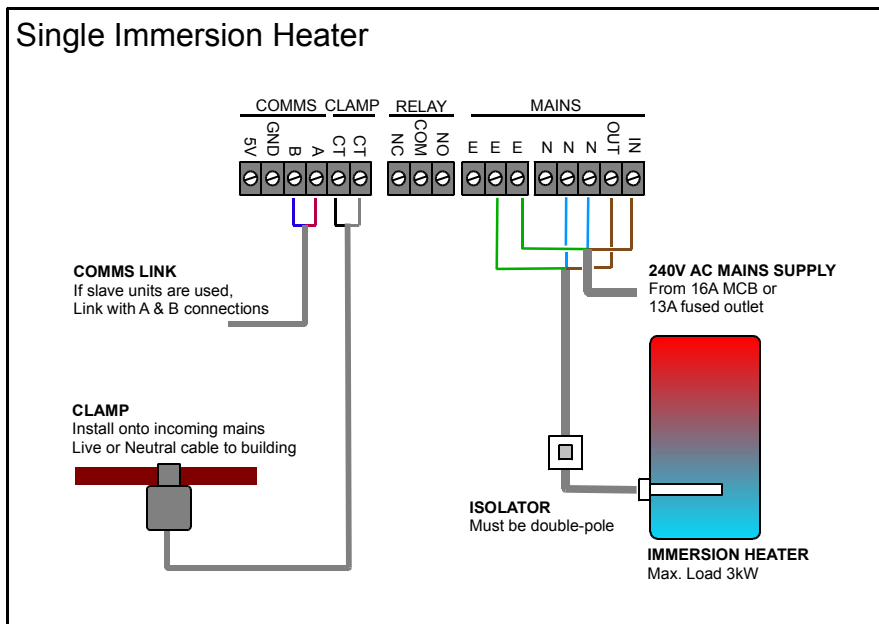
For simple single heater control, relay connections not required, comms link only needed if slave devices are used. (Also see Alternative Mains Wiring diagram).

Alternative Mains Wiring

MAINS

E E E N N N OUT IN

E N

16A

CONSUMER UNIT
With 16A MCB

1.5mm 4-Core

ISOLATOR
Must be double-pole

IMMERSION HEATER
Max. Load 3kW

As an alternative to using two flex cables, one 4-core cable may be used for the mains wiring.

Two Heaters

COMMS   CLAMP   RELAY   MAINS

5V GND B A   CT CT   NC COM NO   E E E N N N OUT IN

COMMS LINK
If slave units are used,
Link with A & B connections

CLAMP
Install onto incoming mains
Live or Neutral cable to building

240V AC MAINS SUPPLY
From 16A MCB or
13A fused outlet

1

2

ISOLATORS
Must be double-pole

IMMERSION HEATERS
Max. Load 3kW each
(Other loads can be used)
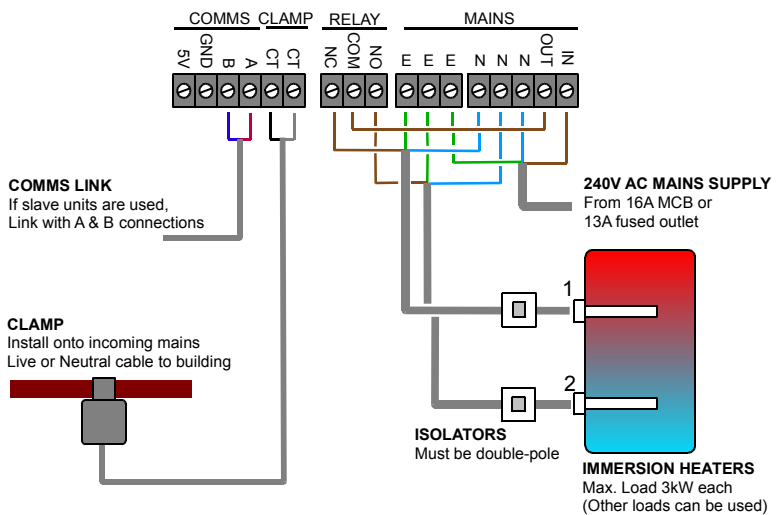
Two heaters can be controlled by using the multi-function relay. The heaters need not be in the same cylinder. Heater no. 1 takes priority.

Boiler Hot Water Boost

COMMS CLAMP RELAY MAINS

5V GND B A CT CT NC COM NO E E E N N N OUT IN

COMMS LINK
If slave units are used,
Link with A & B connections

CLAMP
Install onto incoming mains
Live or Neutral cable to building

BOILER HW CALL
Volt-free contact
Connect to boiler wiring

240V AC MAINS SUPPLY
From 16A MCB or
13A fused outlet
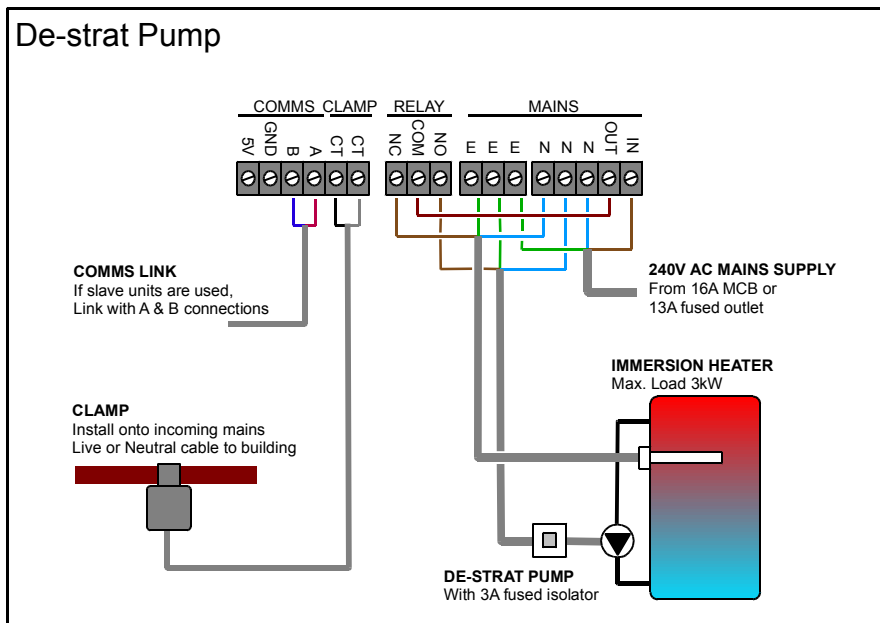
ISOLATOR
Must be double-pole
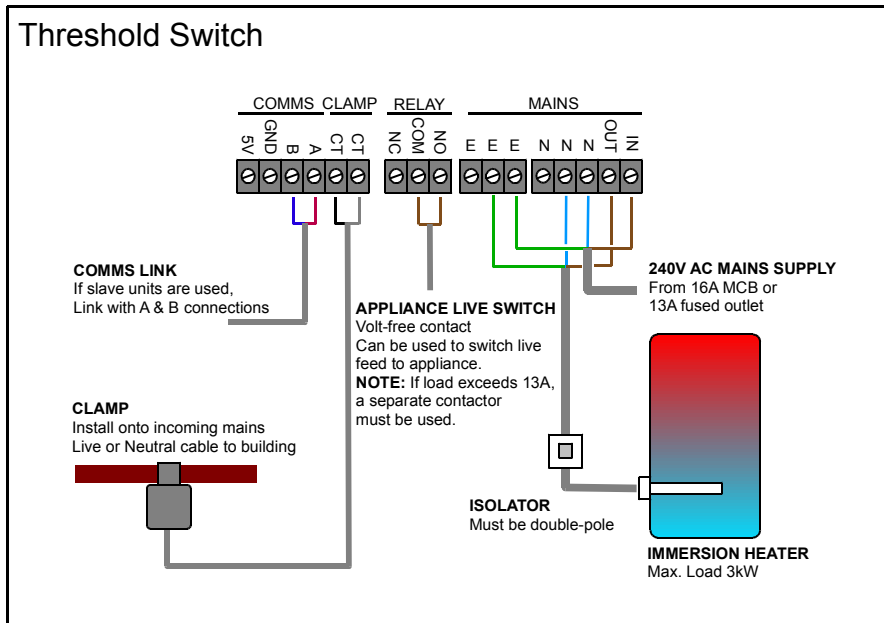
IMMERSION HEATER
Max. Load 3kW
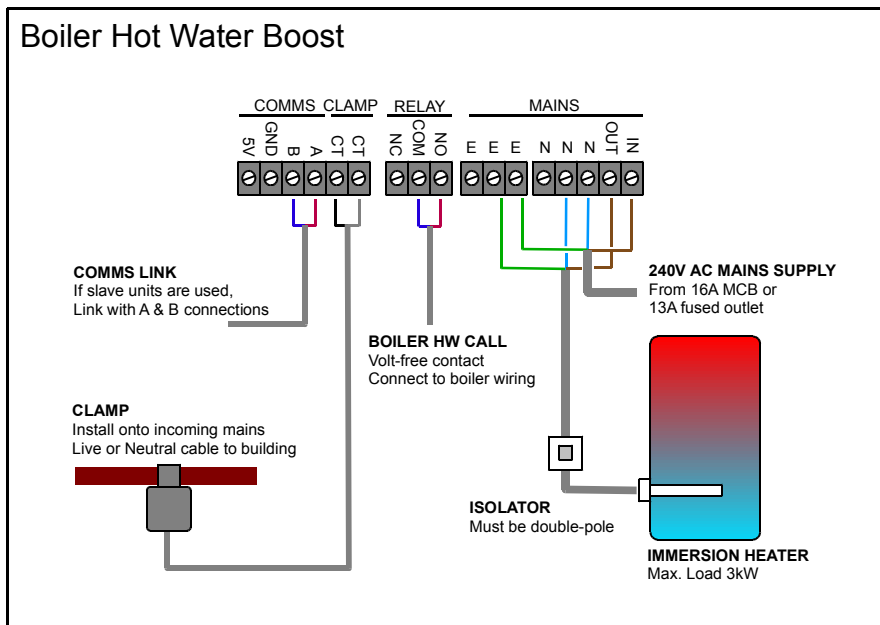
Rather than using the immersion heater to boost hot water, an external heat source e.g. a boiler can be used by making use of the multi-function relay wired to the boiler hot water controls.

De-strat Pump

COMMS CLAMP RELAY MAINS

5V GND B A CT CT NC COM NO E E E N N N OUT IN

COMMS LINK
If slave units are used,
Link with A & B connections

CLAMP
Install onto incoming mains
Live or Neutral cable to building

240V AC MAINS SUPPLY
From 16A MCB or
13A fused outlet

IMMERSION HEATER
Max. Load 3kW

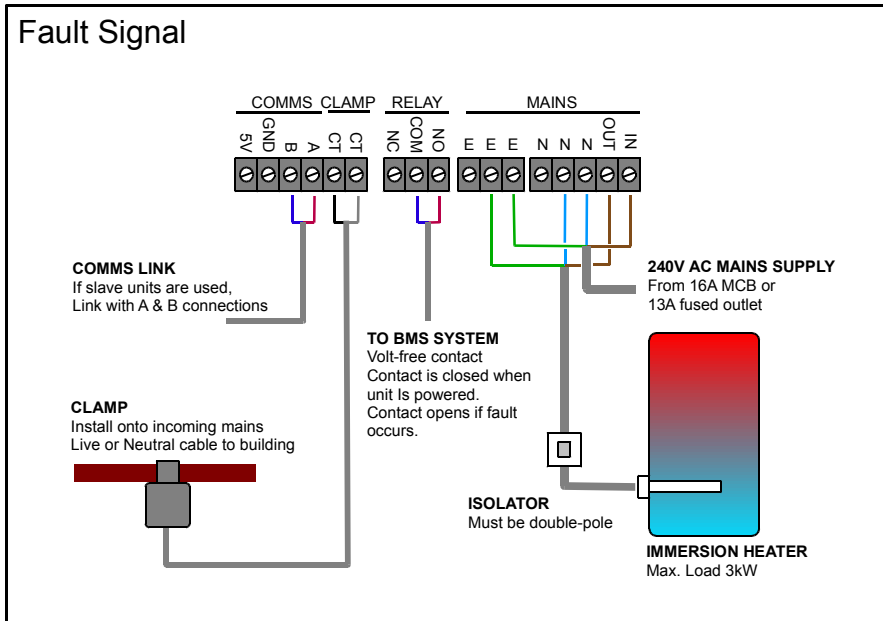**DE-STRAT PUMP**
With 3A fused isolator

It may be desirable to use a de-stratisfication pump to mix the cooler water at the bottom of the bottom of the cylinder with the hot water at the top, this allows a top mounted immersion heater to heat all of the water in the cylinder.

Threshold Switch

COMMS CLAMP RELAY MAINS

5V GND B A CT CT NC COM NO E E E N N N OUT IN

COMMS LINK
If slave units are used,
Link with A & B connections

CLAMP
Install onto incoming mains
Live or Neutral cable to building

APPLIANCE LIVE SWITCH
Volt-free contact
Can be used to switch live
feed to appliance.
NOTE: If load exceeds 13A,
a separate contactor
must be used.

240V AC MAINS SUPPLY
From 16A MCB or
13A fused outlet

ISOLATOR
Must be double-pole

IMMERSION HEATER
Max. Load 3kW

The multi-fuction relay can be used to switch any load on for a set duration, once an export threshold has been reached. The maximum relay current should not be exceeded (an additional contactor may be used for larger loads).

Fault Signal

COMMS CLAMP RELAY MAINS

5V GND B A CT CT NC COM NO E E E N N N OUT IN

COMMS LINK
If slave units are used,
Link with A & B connections

CLAMP
Install onto incoming mains
Live or Neutral cable to building

TO BMS SYSTEM
Volt-free contact
Contact is closed when
unit Is powered.
Contact opens if fault
occurs.

240V AC MAINS SUPPLY
From 16A MCB or
13A fused outlet

ISOLATOR
Must be double-pole

IMMERSION HEATER
Max. Load 3kW

If a fault signal for a BMS system is required, the multi-function can be set to de-activated when a fault occurs.

4. Installer Settings

Once the unit is mounted and wired, the installer will need to set parameters as required for the particular installation. Before applying power to the unit the DIP switches will need to be set.

4.1 DIP Switch Settings

The default position of the DIP switches, is all four set to ON. For the majority of installations this will be the correct setting. However if slave units are connected then they may need to be set differently, see table below.

Default settings show in *Italics*

S1	S2	MODBUS Address Select	Notes
OFF	OFF	1st Slave	Clamp not used, control is via master
OFF	ON	2nd Slave	Clamp not used, control is via master
ON	OFF	3rd Slave	Clamp not used, control is via master
ON	*ON*	Master / Software Selected Address	Clamp is required
S3		**Termination Resistor Select**	
ON		RS485 termination resistor ENABLED	Set to ON if this is at the end of the communication chain. If the unit is in the middle of the chain, set to OFF. Where there are only two devices connected, set both to ON.
OFF		RS485 termination resistor DISABLED	
S4		**Clamp Burden Resistor Select**	
ON		Internal burden resistor ENABLED	
OFF		Internal burden resistor DISABLED	Use external resistor (for supporting alternative clamps)

4.2 Installation Setup

At first switch on, the immerSUN will run through the installation setup process, follow the instructions on the display.

|			
Step 1	INSTALLATION SETUP – PRESS >		Press ▶ to start the installation setup process as instructed. Otherwise press ◀ to cancel.
Step 2	TURN ON HEATER THEN PRESS >		Ensure that the heater isolator is ON and that the thermostat is closed (i.e. the water in the cylinder is cold)
		ERROR! HEATER NOT DETECTED	An error will occur if no load is detected, the immersion heater may be switched off at the isolator, or the thermostat open because the water is hot already. Press ◀ to go back to step 1
	CHECKING HEATER...		The immerSUN will then perform a test to check the output and the heater.
Step 3 *(master only)*	TURN INVERTER OFF THEN PRESS >		You will be asked to switch off the inverter, this is so the immerSUN can detect import/export direction. Use the AC isolator of the PV system.
Step 4 *(master only)*	SETTING UP PLEASE WAIT...		Setting up will take about one minute.
		INSUFFICENT LOAD FOR TEST	If the import power is too small. This could be because the inverter is still switched on, or the heater thermostat is open circuit. Press ◀ to go back to step 1
Step 5	INSTALLATION SETUP COMPLETE!		Once setup has finished this message will be displayed.
Step 6			Switch inverter back on again. Wait for inverter to start working, this usually takes 3 minutes. If export is high enough the immerSUN will start heating water, otherwise you will see the waiting screen.

4.3 Installer Menu

Installer Menu Options (Press and hold ▼ AND ▲ for **5 seconds** for installer menu)

Description	Menu Screen	Sub Menus	
Installer Menu	INSTALLER MENU PRESS >		Press and hold ▼ AND ▲ for **5 seconds** for installer menu, you will then see this screen, press ▶ to continue to installer menu.
View Readings	INSTALLER MENU View Readings	View Readings AC Volts: 245V	**AC Volts** Shows AC mains voltage at present.
		View Readings Grid I: 12.5A	**Grid I** Shows AC mains current at clamp.
		View Readings Load I: 8.2A	**Load I** Shows AC mains current applied to load.
		View Readings Temperature: 38C	**Temperature** Shows internal temperature on the immerSUN.
Set Load The output can be set to a given percentage for testing purposes	INSTALLER MENU Set Load (Auto)	SET LOAD >Auto<	**Auto (Normal mode)** Set output to automatically track exported power.
		SET LOAD >100%<	**Manual** Manually set output power for testing purposes only.
Relay Function The internal multi-function relay can be set to operate as one of 7 different functions. (The currently enabled option is shown in brackets). *See appropriate wiring diagram for chosen relay function*	INSTALLER MENU Relay (OFF)	RELAY FUNCTION >Two Heaters<	**Two Heaters (2 Heater)** Use relay to switch load output between two heaters. Heater no.1 output takes priority (see wiring diagram). Heater no. 2 output only heats when no.1 is fully heated.
		RELAY FUNCTION >Water Boost<	**Water Boost (Boost)** Relay controls boiler to heat water when in water boost mode, rather than using the immersion heater.
		RELAY FUNCTION >De-strat Pump<	**De-stratification Pump (De-strat)** Relay controls cylinder de-stratification pump. Pump is activated when immersion thermostat opens and runs until thermostat closes again. (The immersion thermostat is checked only once a minute so there may be a delay before the pump stops).
		RELAY FUNCTION >Threshold<	**Threshold (Threshld)** Relay operates when an export threshold is reached, relay remains activated for set period of time, even if export drops. Export threshold level and relay on duration can be set as shown below: THRESHOLD SET Export: 500W THRESHOLD SET Duration: 1h30m
		RELAY FUNCTION >Fault Signal<	**Fault Signal (Fault)** Relay is deactivated if a fault condition occurs.
		RELAY FUNCTION >Always On<	**Always On (ON)** Relay is operated continuously. (This is for testing purposes only).
		RELAY FUNCTION >Always Off<	**Always Off (OFF)** Relay is disabled. (This is the default relay function).

Comms Options Options for setting up communication between devices	`INSTALLER MENU` `Comms Options`	`COMMS OPTIONS` `Comms: Disabled`	**Communications Enable/Disable** Communication should be disabled unless slaves are connected or MODBUS is needed.
		`COMMS OPTIONS` `Baud: 9600`	**Baud Rate** Baud rate is speed communication data transfer in bits per second. (The default baud rate is 9600)
		`COMMS OPTIONS` `Address: Master`	**Device Address** The communication address of the device, each device connected should have a unique address. If DIP switches for slave devices are ON they will override this setting. (The default address is Master)
Reset Settings	`INSTALLER MENU` `Reset Settings`	`RESET SETTINGS` `CONFIRM Press >`	**Reset Settings** Use to setup immerSUN after installation. (See section 4.2).

5. User Operation

5.1 Controls and Display
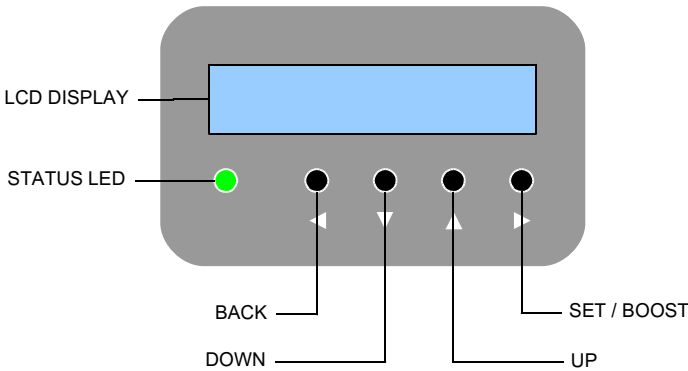
Button	Operation	Alt. Operation	Description
◄	BACK	SCREEN CHANGE	Exit menu or change screen when not in menus
▼	DOWN	MENU	Go down through list or decrease value Enter Main Menu
▲	UP	MENU	Go up through list or increase value Enter Main Menu
►	SET	BOOST	Set value or hold to boost hot water

5.2 Changing Values

To change values, navigate to value you wish to change and press ►
Arrows either side of the value to change will then be shown. Use the ▼ and ▲ buttons to change the value. Press ► again to store the new value. Pressing ◄ will exit edit mode, without changing the value.

Non-Edit Mode	SET TIME 16:01	Press ► to edit value.
Edit Mode	SET TIME 16>01<	Value to be edited is indicated by ❯ ❮ symbols.

5.3 Normal Operation Display

The table below summarises the operation of the immerSUN. There a four main modes of operation: Heating Water; Water Hot; Waiting and Hot Water Boost. The mode is shown on the LCD display, the LED allows the mode to be determined from a distance.

The display changes every two seconds, showing the mode with additional information, the time and date, and the savings in kWh.

Normal Operation

Mode & LED status	Mode Information	Time & Date	Savings	Description
Waiting... ●	Waiting...	Waiting... 10:52 16/02/12	Today: 12.562kWh Total: 5651kWh	Waiting for sufficient exported power to start heating water.
Heating Water ●○	Heating Water Output: 2925W	Heating Water 10:52 16/02/12	Today: 12.562kWh Total: 5651kWh	Heating water with power from PV system, no Grid power is being used. The current output power applied to load is shown.
Heating Water *(Dual Heater Mode)* ●○	Heating Water(2) Output: 2925W	Heating Water(2) 10:52 16/02/12	Today: 12.562kWh Total: 5651kWh	Heating water with power from PV system, no Grid power is being used. Current heater is show in brackets.
Water Hot ●	Water Hot	Water Hot 10:52 16/02/12	Today: 12.562kWh Total: 5651kWh	The water is fully heated, the immersion thermostat is open.
Hot Water Boost ●○	Hot Water Boost ON for: 1h 15m	Hot Water Boost 10:52 16/02/12	Today: 12.562kWh Total: 5651kWh	Heating water at full power, regardless of available export power.

Master / Slave Operation

Slave Devices **Status Screen**	Status of Slaves HEAT WAIT ----	When MODBUS is enabled and the device is set as Master, this screen will be shown giving the status of all the slave devices in the system.	**Status Abbreviations** HEAT : Heating Water HOT : Water Hot WAIT : Waiting for sufficient export power ERR! : Error ---- : No device detected

5.4 Main Menu

Main Menu Options (Press ▼ **OR** ▲ for main menu)

Description	Menu Screen	Sub Menus		
View Savings The immerSUN measures and records energy applied to immersion heater. As only the renewable energy is counted this is effectively saved energy.	`MAIN MENU` `View Savings`	`Savings` `Today: 12.563kWh`	**Today** Show savings made today in kWh.	
		`Savings` `Month: 224kWh`	**Month (current month)** Show savings made this month in kWh.	
		`Savings` `MAR: 224kWh`	**Month (each month)** Show savings made in the indicated month in kWh. Savings are stored for each month of the year.	
		`Savings` `Year: 1791kWh`	**Year** Show savings made this year in kWh.	
		`Savings` `Total: 3215kWh`	**Total** Shows total energy saved to date in kWh.	
View Event Log	`MAIN MENU` `View Event Log`	`Power On` `14:53    12/06/12`	`Code: 7` `Value: 0`	**Log Details** Every normal operation event is logged along with the time and date of the event. Code is the event code number. Value is the value associated with the event.
View Fault Log	`MAIN MENU` `View Fault Log`	`POWER FAILED` `14:53    12/06/12`	`Code: 105` `Value: 0`	**Log Details** Every change of status and any faults are recording in the log along with the time and date of the event. Code is the fault code number. Value is the value associated with the fault.
Settings	`MAIN MENU` `Settings`	`SETTINGS` `Set Time`	`SET TIME` `16:01`	**Set Time** Time is used for Hot Water Boost and the event log. Time is maintained during power outages for at least 48 hours.
		`SETTINGS` `Set Date`	`SET DATE` `12/06/12`	**Set Date** The date is used for the event log. Date is maintained during power outages for at least 48 hours.
		`SETTINGS` `Set Contrast`	`SET CONTRAST` `>20%<`	**Set Display Contrast** The display contrast can be adjusted if required.

Timed Boost	MAIN MENU Timed Boost	TIMED BOOST (A) 06:30 – 0h 30m	**Timed Boost A** The water heating can be boosted to ensure hot water by a given time. When heating water in boost mode, the immersion heater will be fully on regardless of available free power. Set the On time and Duration for timed hot water boost. If timed water heating boost is not required, set the duration to 0h 0m.
		TIMED BOOST (B) 17:00 - 1h 15m	**Timed Boost B** Water heating boost can be set for twice a day (A & B). Set the On time and Duration for timed hot water boost. If timed water heating boost is not required, set the duration to 0h 0m.

5.5 Manual Hot Water Boost

In addition to the timed hot water boost option, the water heating can be boosted manually. You may wish to use this function if you have an unexpected hot water demand. See section 5.4 for Timed Boost option.

Manual Boost	Manual Boost ON for: >1h 00m<	To manually boost the hot water, press and hold ▶ then use the ▼ and ▲ buttons if you want to change the boost time. Confirm boost by pressing ▶ again. The Hot Water Boost operation will then start The water heating will then be boosted for the set duration, or until the water is hot, whichever is sooner.
	Hot Water Boost CANCELLED	To cancel boost mode, press and hold ◀ for 2 seconds.

5.6 Error Messages

If a fault condition occurs, an error message will be displayed and the LED will flash red. The error will be logged in the Fault Log. Normal operation will continue once the immerSUN is reset.

Error Messages ●○	UNIT TEMPERATURE TOO HOT		The internal temperature of the immerSUN is too high. Check vents are clear.
	MAINS VOLTAGE TOO HIGH	MAINS VOLTAGE TOO LOW	AC supply voltage is outside of the operating parameters.
	ERROR CLAMP REVERSED		The clamp has been reversed, the settings will need to be reset to reconfigure the unit. (See section 4.3 *Reset Settings*)
	ERROR OUTPUT OVERLOAD		The output of the unit is overloaded, the heater is larger than 3kW.

6. Troubleshooting

Use the table below to help remedy the problem.

Any actions requiring opening the immerSUN and/or testing voltages should only be carried out a competent person. Contact your installer if in doubt.

Symptom	Possible Cause	Action
Unit dead, no display	MCB Tripped	Check MCB is ON
	LIN and LD terminals swapped	Check supply voltage on LIN terminal
	Internal Fuse Blown	Test fuse inside immerSUN
Showing *Water Hot* even though the water is cold	No load present on LD terminal	Immersion heater isolator should be ON
		Check immersion heater thermostat is not open
		Immersion heater element could be open-circuit
Always showing *Waiting...*	PV system not generating sufficient power	Wait for PV system power increase or reduce demand by switching off appliances
	Problem with signal from clamp	Check clamp is fitted to correct cable
		Check clamp wire connections to terminals
Heating water at full output even when PV is not exporting	Clamp reversed	The clamp has been reversed, the settings will need to be reset to reconfigure the unit. (See section 4.3 *Reset Settings*)
Slave device status not showing on master display	Communication link wires not properly connected	Check continuity of communication wires to terminals A & B
	Address conflict	Check DIP switch positions
Slave status screen not showing on master	MODBUS not enabled on master	Check MODBUS is enabled in Comms menu
	Address settings incorrect	Check DIP switch positions

7. Legionella Advice

The legionella bacteria is present in all source water. The concentration, however is normally too low to be a risk to health. The growth of the bacteria and hence the concentration is dependent on stagnation time, temperature and nutrient availability.

A domestic hot water storage cylinder in the UK is unlikely to remain stagnant in the cylinder for much more than a day under normal occupation of the premises. In addition the mains cold water supply is very low in nutrients, as it is often treated with chlorine which remains in the water and is toxic to the bacteria.

Nevertheless, if the premises are unoccupied for any length of time, such as absence on holiday, it is good practice to sterilise the system using the immersion heater or an auxiliary heat source before using any hot water. This applies whether or not a solar water heating system is fitted.

It is recommended to set the hot water boost function, or use existing hot water boiler controls to be sure that the water is heated up to 60°C once a day.

8. Warranty

Subject to the provisions described below, this product is protected for three (3) year against defects in material and workmanship.

Should this product fail to perform as described within the warranted period, it will be repaired or replaced with the same or functionally equivalent product by 4eco, at its discretion, free of charge provided you: (1) Return the failed product to 4eco with shipping charge prepaid, and (2) provide 4eco with proof of the original date of purchase. Returned or replacement products will be returned to you with shipping charges prepaid.

Replacement products may be refurbished or contain refurbished materials. If 4eco, by its sole determination, is unable to repair or replace the defective product, it will refund the depreciated purchase price of the product.

The warranty does not apply if, in the judgement of 4eco, the product fails due to damage from shipment, handling, storage, accident, abuse, misuse, or if it has been used or maintained in a manner not conforming to product manual instructions, has been modified in any way, or has had any serial number removed or defaced. Repair by anyone other than 4eco or an approved agent will void this warranty. The maximum liability of 4eco under this warranty is limited to the purchase price of the product covered by the warranty.

Prior to returning any defective product, the end customer or the reseller from whom the end customer originally purchased the product must obtain a Return Materials Authorisation (RMA) number from 4eco. All defective products should be returned to 4eco with shipping charges prepaid. 4eco will not accept collect shipments.

Except as specifically provided in this agreement or as required by law, the warranties and remedies stated above are exclusive and in lieu of all others, oral or written, express or implied. Any and all other warranties, including implied warranties or merchantability, fitness for a particular purpose and non-infringement of third party rights are expressly excluded. 4eco shall not under any circumstances be liable to any person for any special, incident, indirect or consequential damages, including without limitation, damages resulting from use or malfunction of the products, loss of profits or revenues or costs of replacement goods, even if 4eco is informed in advanced of the possibility of such damages.

9. Conformance

EC Declaration of Conformity

In accordance with EN ISO 17050-1:2004

We   4eco Ltd

of   3 Church View Business Centre
                    Binbrook, Lincolnshire, LN8 6BY, England

In accordance with the following Directives:

2006/95/EC   The Low Voltage Directive

2004/108/EC   The Electromagnetic Compatibility Directive

Hereby declare that:

Equipment   Heater controller for microgeneration systems

Model   immerSUN

Is in conformity with the applicable requirements of the following documents

Ref. No.	Title	Edition/Date
BS EN 61000-6-1	Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments	2007
BS EN 61000-6-3	Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments	2007

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all applicable Essential Requirements of the Directives.

Signed:

Name: Lee Sutton

Position: Technical Director

On: 12 July 2012

10. Commissioning Sheet

Model

Serial Number

Installation Company

Installer Name

Date of Installation

Legionella advice given?

See section 7
(tick when done)

Signed by Installer

immersun

immerSUN